Appln. No. 10/067,978 Amdt. dated May 14, 2004

Reply to final Office Action of April 6, 2004

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

## **Listing of Claims:**

1. (currently amended) An oil-based lubricant composition comprising a molybdenum source; [[,]] a hydroxy-substituted dithiocarbamate [[,]] having the formula:

wherein R and R' may be independently hydrogen or alkyl with the requirement that at least one of R or R' is  $C_1$  to  $C_{22}$  alkyl, R" is R"'XCH<sub>2</sub>, R"'O(C=O)CH<sub>2</sub>XCH<sub>2</sub>, or R"'O(C=O)CH<sub>2</sub>XCH<sub>2</sub> where R"' is  $C_1$  to  $C_{22}$  alkyl, and X is sulfur (S) or oxygen (O); and optionally, a phosphorous source.

#### Claim 2 (canceled)

3. (currently amended) The composition of claim [[2]]1, wherein R and R' are alkyl.

#### Claims 4-5 (canceled)

- 6. (currently amended) The composition of claim [[2]]1, wherein R" is R"'XCH<sub>2</sub>.
- 7. (currently amended) The composition of claim [[2]]1, wherein R" is R"'O(C=O)CH<sub>2</sub>XCH<sub>2</sub>.

- 8. (currently amended) The composition of claim [[2]]1, wherein R" is R"'O(C=O)CH<sub>2</sub>CH<sub>2</sub>XCH<sub>2</sub>.
- 9. (original) The composition of claim 6, wherein X is oxygen (O).
- 10. (original) The composition of claim 6, wherein X is sulfur (S).
- 11. (original) The composition of claim 7, wherein X is oxygen (O).
- 12. (original) The composition of claim 7, wherein X is sulfur (S).
- 13. (original) The composition of claim 8, wherein X is oxygen (O).
- 14. (original) The composition of claim 8, wherein X is sulfur (S).
- 15. (original) The composition of claim 1, wherein the molybdenum source is selected from the group consisting of molybdenum carboxylates, molybdenum complexes of organic amides, molybdenum complexes of organic amines, and molybdenum dialkyldithiocarbamates.
- 16. (original) The composition of claim 1, wherein the molybdenum source comprises a molybdenum carboxylate.
- 17. (original) The composition of claim 1, wherein the molybdenum source comprises a molybdenum complex of an organic amide.

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18. (original) The composition of claim 1, wherein the molybdenum source comprises a molybdenum complex of an organic amine.

19. (original) The composition of claim 1, wherein the molybdenum source comprises a molybdenum dialkyldithiocarbamate.

20. (currently amended) A composition comprising a molybdenum source, a hydroxy-substituted dithiocarbamate, and a phosphorous source The composition of claim 1, wherein the phosphorous source is present.

- 21. (original) The composition of claim 20, wherein the phosphorous source is selected from zinc dialkyldithiophosphates, alkyl phosphites, aryl phosphites, mixed alkyl/aryl phosphites, alkyl thiophosphites, aryl thiophosphites, mixed alkyl/aryl thiophosphites alkyl phosphates, aryl phosphates, mixed alkyl/aryl phosphates, metal or amine salts of phosphorodithioic acids, ashless dialkyldithiophosphates, ashless diaryldithiophosphates, and mixed ashless alkyl/aryldithiophosphates.
- 22. (original) The composition of claim 20, wherein the phosphorous source comprises zinc dialkyldithiophosphate.
- 23. (original) The composition of claim 20, wherein the phosphorous source comprises zinc diethyl/diisopropyldithiophosphate.
- 24. (original) The composition of claim 20, wherein the hydroxy-substituted dithiocarbamate is present in an amount of from about 0.05 to about 1.5 weight percent, the molybdenum source is present in an amount to deliver from about 25 to about 1500 ppm molybdenum, and the phosphorus source is present in an amount to deliver from about 250 to about 1000 ppm phosphorus.

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25. (original) An additive concentrate comprising the composition of claim 1.

26. (original) A lubricating oil comprising a major amount of a base oil of lubricating

viscosity, and a minor amount of a composition of claim 1.

27. (previously presented) The lubricating oil of claim 26, wherein the composition is

present in an amount of from about 0.25 to about 2.5 percent by weight of the lubricating oil.

28. (original) The composition of claim 1, wherein the hydroxy-substituted dithiocarbamate is

present in an amount of from about 0.05 to about 1.5 weight percent, and the molybdenum source is

present in an amount to deliver from about 25 to about 1500 ppm molybdenum.

Claims 29-36 (canceled)

37. (original) The lubricating oil of claim 26, wherein the base oil of lubricating viscosity is

selected from animal oils, vegetable oils, mineral lubricating oils, solvent or acid treated mineral oils,

oils derived from coal or shale, hydrocarbon oils, halo-substituted hydrocarbon oils, alkylene oxide

polymers, esters of dicarboxylic acids, esters of polyols, esters of phosphorus-containing acids,

polymeric tetrahydrofurans, silicon-based oils, and mixtures thereof.

38. (original) The compound 3-(2-ethylhexyloxy)-2-hydroxypropyl bis(2-ethylhexyl)

carbamodithioate.

39. (original) The compound 3-(2-ethylhexyloxy)-2-hydroxypropyl dibutylcarbamodithioate.

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# 40. (original) A compound with the following chemical formula:

## Claim 41 (canceled)

# 42. (original) A lubricating composition comprising a compound with the following chemical formula:

# Claims 43-46 (canceled)

47. (original) A lubricating composition comprising a compound with the following chemical formula:

OH S N 
$$x = 1-3$$

48. (original) A lubricating composition comprising a compound with the following chemical formula:

49. (original) A lubricating composition comprising a compound with the following chemical formula:

$$R$$
"  $S$   $N$   $R$ 

wherein R, R' and R" are alkyl groups, and wherein the sum of the number of carbon atoms of R and R' is 8 or more, and R" is R"'XCH<sub>2</sub>, where R"' is alkyl and X is oxygen.

50. (previously presented) The composition of claim 1, wherein the molybdenum source comprises an organo-molybdenum compound.

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51. (previously presented) The composition of claim 20, wherein the molybdenum source

comprises an organo-molybdenum compound.

52. (previously presented) The composition of claim 20, wherein the molybdenum source

comprises an organo-molybdenum compound present in an amount to deliver 25 ppm to 1500 ppm

molybdenum, and the hydroxy-substituted dithiocarbamate is present in an amount to deliver 100

ppm to 3000 ppm sulfur, the phosphorus source is present in an amount to deliver about 500 ppm to

less than 1000 ppm phosphorus.

53. (previously presented) The composition of claim 20, wherein the molybdenum source

comprises an organo-molybdenum compound present in an amount to deliver from 25 ppm to 1500

ppm molybdenum, and the hydroxy-substituted dithiocarbamate is present in an amount to deliver

100 ppm to 2250 ppm sulfur, the phosphorus source is present in an amount to deliver about 500

ppm to less than 1000 ppm phosphorus.

54. (previously presented) The composition of claim 20, wherein the molybdenum source

comprises an organo-molybdenum compound present in an amount to deliver from 25 ppm to 1500

ppm molybdenum, and the hydroxy-substituted dithiocarbamate is present in an amount to deliver

100 ppm to 1500 ppm sulfur, the phosphorus source is present in an amount to deliver about 500

ppm to less than 1000 ppm phosphorus.

55. (previously presented) A crankcase oil comprising the composition of claim 20.

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56. (currently amended) A composition resulting from contacting a molybdenum source;[[,]] a hydroxy-substituted dithiocarbamate[[,]] having the formula:

$$R''$$
  $S$   $N$   $R'$ 

wherein R and R' may be independently hydrogen or alkyl with the requirement that at least one of R or R' is  $C_1$  to  $C_{22}$  alkyl, R" is R"XCH<sub>2</sub>, R"O(C=O)CH<sub>2</sub>XCH<sub>2</sub>, or R"O(C=O)CH<sub>2</sub>XCH<sub>2</sub> where R" is  $C_1$  to  $C_{22}$  alkyl, and X is sulfur (S) or oxygen (O); and a phosphorous source.

- 57. (previously presented) The composition of claim 56, wherein the molybdenum source comprises an organo-molybdenum compound.
- 58. (new) The composition according to claim 1, wherein the hydroxy-substituted dithiocarbamate comprises the reaction product produced by combining in substantially equimolar proportions, and in a process carried out in the absence of a reaction solvent: an epoxide, a primary or secondary amine, and carbon disulfide.
- 59. (new) The composition according to claim 58, wherein the epoxide is selected from the group consisting of methyl glycidyl thioether, ethyl glycidyl thioether, propyl glycidyl thioether, butyl glycidyl thioether, pentyl glycidyl thioether, hexyl glycidyl thioether, cyclohexyl glycidyl thioether, heptyl glycidyl thioether, octyl glycidyl thioether, nonyl glycidyl thioether, decyl glycidyl thioether, undecyl glycidyl thioether, dodecyl glycidyl thioether, tridecyl glycidyl thioether, tetradecyl glycidyl thioether, pentadecyl glycidyl thioether, hexadecyl glycidyl thioether, heptadecyl glycidyl thioether, octadecyl glycidyl thioether, isomers thereof and mixtures thereof.

60. (new) The composition according to claim 58, wherein the epoxide is selected from the group consisting of methyl glycidyl ether, ethyl glycidyl ether, propyl glycidyl ether, butyl glycidyl ether, pentyl glycidyl ether, hexyl glycidyl ether, cyclohexyl glycidyl ether, heptyl glycidyl ether, octyl glycidyl ether, nonyl glycidyl ether, decyl glycidyl ether, undecyl glycidyl ether, dodecyl glycidyl ether, tridecyl glycidyl ether, tetradecyl glycidyl ether, pentadecyl glycidyl ether, hexadecyl glycidyl ether, heptadecyl glycidyl ether, octadecyl glycidyl ether isomers thereof and mixtures thereof.